

Notice of Allowability

Application No.

10/716,738

Examiner

Krystyna Suchecki

Applicant(s)

NOKITA, MAKOTO

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to ____.
2. ☒ The allowed claim(s) is/are 1-6.
3. ☒ The drawings filed on 17 November 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date ____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other

Craig E Church
Craig E. Church
Primary Examiner

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with John Harroun on 08/19/04.
3. The application has been amended as follows:
4. Please amend claim 6 as follows:

6. (Amended) An X-ray computed tomography apparatus, comprising:
an X-ray source that radiates an X-ray to an object;
an X-ray detection device that converts the X-ray passing through the object into X-ray
detection image data;
at least one X-ray shield located between a focal point of the X-ray source and the X-
ray detection device;
control means for performing control so as to relatively move the X-ray source and the
object;
scattered line removing means for calculating a scattered X-ray data component
corresponding to a scattered X-ray component from X-ray detection image data corresponding to a
region in which a first-order X-ray is shielded by the X-ray shield and calculating a first-order X-ray
image data obtained by removing the scattered X-ray component from the X-ray detection
image data;
complementing means for calculating complemented image data from the first-order X-ray
image data by complementing a part of the first-order X-ray image data corresponding to the
region in which the first-order X-ray is shielded; and
rearranging means for rearranging an image by reversely projecting the complement
image data,
wherein the complementing means complements the part of the first-order X-ray image data
obtained by shielding the first-order X-ray, corresponding to an X-ray path connecting the focal
point of the X-ray source with the X-ray shield by using another part of the first-order X-ray image
data obtained by An X-ray computed tomography apparatus according to claim 1, wherein when
the X-ray path in the 180-degree opposite direction is not existent, the complementing means
complements the process image based on image data obtained by converting an X-ray radiated
along an X-ray path closest to [[the]] a [[X-ray]] path in the 180-degree opposite direction when
an X-ray path in the 180-degree opposite direction does not exist.

Allowable Subject Matter

5. Claims 1-6 are allowed.

6. The following is an examiner's statement of reasons for allowance: Claims 1 and 6 contain allowable subject matter for at least the reason that the prior art of record fails to teach or reasonably suggest an X-ray computed tomography apparatus comprising at least one X-ray shield, scattered ling removing means, complementing means and rearranging means for an image reversely projected as claimed. While prior art such as Harding (US 6,744,845) teaches a helically scanning X-ray computed tomography device with 180 degree rotation and scatter control, there is no reverse projection of complement image data as set forth in the instant application. Claims 2-5 contain allowable subject matter at least by virtue of their dependency.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krystyna Suchecki whose telephone number is (571) 272-2495.

The examiner can normally be reached on M-F, 9-5.

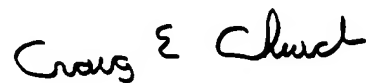
9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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Craig E. Church
Primary Examiner